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Reply to Chapman: Perfect imperfection?

I welcome Chapman's (1) commentary on the etiology of molecular flaws in the human genome. If I understand his argument correctly, the human genome provides a biological example of a small world network (SWN), because its multitudinous components have become self-configured (under the influence of natural selection) in ways that tend to maximize genomic stability and resiliency, while nevertheless, leaving this otherwise imperfect molecular system highly vulnerable to focused insults such as particular deleterious mutations. I find this hypothesis to be quite interesting both scientifically and theologically. It is scientifically useful, because it raises several questions that, in principle, might be addressed empirically and/or logically (2). For example, what kinds of network structures are, in theory, most robust, and does natural selection

truly promote maximally robust SWNs? The hypothesis is also theologically intriguing (3). Chapman states (1), "[i]f I were the creator, I would organize the genome as an SWN." In some ways, this sentiment harkens back to a famous statement by Dobzhansky (4): "I am a creationist and an evolutionist. Evolution is God's, or Nature's method of creation."

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2. Barabási AL, Albert R (1999) Emergence of scaling in random networks. *Science* 286: 509–512.
3. Avise JC (2010) *Inside the Human Genome: A Case for Non-Intelligent Design* (Oxford University Press, London).
4. Dobzhansky T (1973) Nothing in biology makes sense except in the light of evolution. *Am Biol Teach* 35:125–129.

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